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Tjong Tjin Tai, T.F.E.; Zegveld, C.B.M.C.

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Civil liability of chains and networks in health care
T.F.E. Tjong Tjin Tai and C.B.M.C. Zegveld
T.F.E. Tjong Tjin Tai is Senior lecturer in Private Law, Tilburg University.
tel. +31(0)134668219
fax +31(0)134662323
e-mail: t.f.e.tjongtjintai@uvt.nl
C.B.M.C. Zegveld is PhD researcher, department of Private Law, Tilburg University.
tel. +31 (0) 132662714
fax +31(0)134662323
e-mail: c.zegveld@uvt.nl

Abstract
This article discusses some legal implications of networks, in particular the liability of networks and chains in health care. We start with a brief description of common tendencies in social and organisation network research. Subsequently we explain how certain characteristics of networks are or are not found relevant from a legal perspective. Only a subset of networks and network properties is generally recognised as an interesting subject for legal research. The proporties that are legally relevant are not commonly investigated in social and organisational network research. Finally we will elaborate the consequences of these observations for the legal analysis of liability of health care networks and chains.

Keywords
interdisciplinary, law, partnership

Introduction
In this article we will discuss a few legal consequences, in particular with respect to liability, of networks and chains in the health care sector. An additional aim is to introduce non-lawyers to the legal perspective on networks. At the same time we hope to provide legal scholars an introduction to aspects of networks that may be relevant to legal research. By doing so we hope to contribute to and stimulate interdisciplinary legal research on networks. We will only briefly touch on other issues of the interrelation of liability and law with networks, important though these are, as the scope of the present article and research does not permit an adequate treatment of these issues. The reason for our focus on liability of networks is that this is a distinct issue which is not always fully recognised as such, and furthermore allows us to analyse the complications that arise when trying to match law and network theory.

We will proceed with a basic summary of research results and areas of investigation within social network analysis. Subsequently we will discuss the way in which lawyers treat networks as these are defined in social science, and will provisionally draw some conclusions on the consequences of the legal view. In the third paragraph we will apply and elaborate these findings through a more detailed description of liability issues of health care networks and chains.

A provisional definition of networks
When considering networks one has to bear in mind that the legal understanding of networks differs from the sociological and organisational usage. In order to explicate the concepts on which we will base our analysis, and to accommodate (legal) scholars who are not familiar with these concepts, we will begin by explaining the sociological and organisational concept of networks as we understand it. We are aware that we cover well-trodden ground for veterans of network theory, who, if so desired, can continue directly with the next paragraph.

In the extensive sociological and organisation literature on networks and chains there is not a specific common definition of networks. Nonetheless a general consensus exists regarding the basic elements (Provan *et al.* 2007, Bruggeman 2008, Kilduf and Tsai 2003, Freeman 2004). A network can be defined as consisting of network nodes and the connections

(ties, network lattices) between the nodes. A node can consist of an individual or an organisation. Networks can be small or large. Theoretically a network might consist of two nodes; in practice many authors assume a network to consist of at least three nodes (e.g. Provan and Kenis 2008) as only these exhibit the specific characteristics that make networks interesting as a subject of research. We will follow the majority view as this fits in well with the legal perspective (see next paragraph). Networks are usually contrasted with both markets and hierarchical forms of organisation (Powell 1990, Bradach and Eccles 1989). A hierarchical organisation is at odds with the idea of a network consisting of more or less equivalent partners having substantial autonomy. Nonetheless networks may exhibit governance structures which may involve some nodes having positions of greater control (Provan and Kenis 2008).

Networks can be analysed in numerous ways. An important distinction is the analysis at the individual level and at the network level. Analysis at the individual level more or less concentrates on the viewpoint of the individual nodes of the network. Analysis at the network level (whole networks) concentrates on the general network operation and its effects (Provan *et al*. 2007). Research in social network analysis may consist in investigating the effects of network properties such as the structure of networks, hierarchical relations, governance structures, the 'flows' of information between nodes, etcetera. One can distinguish between the level at which the analysis starts. Most analysis starts from the perspective of the network participant (the so-called ego-centric view). There is however a growing body of research which looks specifically at the network level, the so-called 'whole networks' (Provan *et al.* 2007).

A related term in healthcare organisation is the concept of 'chains'. Similar to the term 'network', there is no single generally accepted definition of chains in health care. The Dutch department of Health inspection (Inspectie Gezondheidszorg, IGZ) defines such chains as the coherent group of caring actions by several care providers with respect to one patient (IGZ 2003: 18), which is not particularly illuminating, as practicaly any caring practice involving two or more care providers falls under this definition. However, a few characteristics appear to be agreed on. Generally speaking, a chain is a special kind of network with emphasis on vertical integration, transcending a single discipline or expertise (Fabbricotti 2007). Chains are in particular characterised by the way in which the nodes are selected and connected. In a network may be selected in accordance with their actual involvement with a certain issue or policy program, and the nature of their relations may be more social than functional, A chain is primarily functionally organised: the selection of nodes and the relations between the nodes are determined with a view to the specific function to which the chain is oriented. The functional relations between the nodes, and the possible paths throught the chain are mostly determined beforehand. Furthermore, a chain is sequential and time-directed (Duivenboden 2000). Hence a chain is a particular type of network. The term 'healthcare chain' is appropriate in cases in which it can be established beforehand with reasonable certainty which kinds of care a patient needs, and from which care providers. This makes it possible to 'phase' the chain (Vrijhoef, Steuten 2006), i.e. divide the chain in consecutive phases which the patient subsequently goes through. An example of a chain is the organisation of care in case of cerebral vascular accidents or strokes, set up in The Netherlands through national and regional protocols and statutes. See the collection of protocols at < http://www.cbo.nl/thema/Richtlijnontwikkeling/Overzicht-richtlijnen/Cardiovasculaire-aandoening/>. Three phases are usually distinguished in this chain: the acute phase, the recovery phase, and the chronic phase. In each phase different healthcare providers are involved with the treatment of the patient.

The term 'healthcare chain' does not cover all forms of cooperation in health care. (Plochg *et al.* 2007). Healthcare networks may for example consist of horizontal integration instead of vertical integration as in chains. Furthermore, for some healthcare problems it is not possible to phase the care process. For example, patients who are suffering from diabetes need various forms of care simultaneously and repeatedly from different healthcare providers.

<u>The legal treatment of networks in general</u>

Valuable though the analysis of networks may be from a sociological or organisational point of view, the relevance to legal analysis is still to be determined. 'Networks are not a legal concept', as was remarked by Buxbaum (1993, 704, cited by Teubner 2008, 1). In recent years nonetheless there has been more interest within legal research for networks (in particular Teubner 2004 and 2008, Cafaggi 2008). A full overview of the legal treatment of networks within law is not possible within the space of a single article (see Teubner 2008 for an attempt at a more general analysis of networks). In this article we will make a few preliminary observations to make clear in what way private law, in particular Dutch law, analyses networks when considering legal issues, in particular questions of liability.

A first observation is that the law tends to first reduce networks as far as possible to other, familiar constructs. Legally speaking, a 'network' consisting of only two actors would not be considered to be a network, but rather a common form of cooperation (contractual or extra-contractual) which can be analysed with time-honoured dogmatic instruments developed in contract law and tort law. Only multi-party forms of cooperation are considered to be networks. The legal perspective therefore also assumes that networks have at least three nodes. Furthermore, insofar as a network has been formalised by setting up a legal form, such as a limited corporation, cooperative venture etcetera, lawyers will generally call such a network simply by the name of the legal entity that embodies the network. Hence for legal scholars, networks are a remainder, a category for forms of cooperation that cannot be pigeon-holed in a different category. The tendency for such a reduction may be unfortunate as it leads to overlooking network-specific characteristics (Teubner 2008). A critique of this tendency would entail a review of basic legal categories like two-party contracts and corporations. This exceeds the scope of the present article.

In this article we will therefore concentrate on multi-party networks. We will leave aside two-party forms of cooperation, as these are legally relatively simple. Furthermore we will only briefly discuss networks cast in the form of a legally recognised corporation, as these are subject to specific, relatively clear rules. For multi-party networks that are not incorporated, there is no clear-cut prior legal category available. Hence such networks are the most interesting from a legal point of view. For such networks the law does not have an unequivocal answer to liability questions such as: To which party can the patient turn if he suffers damage caused by inadequate care offered by a network? And: What should network partners do to prevent liability?

Incidentally the latter question may raise questions as it could be defended that the issue is not prevention of liability but rather prevention of damage. However, in the legal perspective liability can (partially) be seen as a way of allocating certain risks and responsibilities. Prevention of liability may cause a reshuffling of responsibilities and thereby may contribute to prevention of damage. As the law cannot directly prevent actual damage, it operates through indirect stimuli such as liability. Prevention of liability for certain cases may actually improve prevention as it may cause the actor to focus on preventing damage in these cases, while a fully non-fault liability may lead to apathy as liability arises regardless of actual actions. Whether such consequences actually occur is to be determined by empirical research.

A second point of interest is the relatively strict distinction between analysis at the individual and at the network level. It may at first seem difficult to find a counterpart of this distinction in law. To be sure, a legal analysis may aim at determining legal consequences for an individual or the collective, but in doing so it will often be necessary to take into account all relevant circumstances of the case, among which are usually both individual and network-level aspects. This can be explained by the foregoing considerations. As the network as a whole is only legally relevant insofar as it is a legally recognised form of cooperation (such as a legal corporation), in such a case the rules which govern such forms of cooperation prevail, hence only network properties that are relevant for these rules will be taken into account. If the network is not a legally recognised form of cooperation, only the rules regarding individual liability will be applicable, and for these rules mostly individual aspects of the person held liable will be of interest. In that case the question will be approached from the viewpoint of the individual network node, hence the analysis will mostly remain on the

individual level. Nonetheless the position of the node within the network may be relevant as well, and in this manner some characteristics of the network itself may be taken into account in the legal decision. Examples may be the goal of the network (commercial or non-commercial), the age of the network, etcetera (Tjong Tjin Tai c.s. 2009). It should however be pointed out that the legal analysis considers different properties than are usually studied in network analysis.

The emphasis on the individual viewpoint can be explained by the structure of responsibility in the legal sense (Cane 2002). Most legal arguments are aimed at determining either duties and obligations, or liability. For such questions a prerequisite is one of attributability. The law needs a legal subject to whom certain obligations or liability can be attributed, attached. There can be no free-floating obligations. This can be explained by the fact that obligations (such as liability leading to an obligation to pay damages) are to be determined and enforced by means of a court procedure. The judicial decision can only be effected by claiming the damages from particular assets, which needs a legal subject - an individual or a legally recognised corporation - as the owner of the assets (estate). Therefore the liability must always be at least indirectly connected to such a legal subject. We cannot simply decide to recognise new social or organisational forms as legal subjects: at the very least it must be clear who can represent the subject, whether the subject can be owner of separate assets other than the assets of its members, or whether someone else is liable for the subject (as in the case of children). Liability would be empty without a subject that can be forced to pay damages. As a result, legal argument is in fact by necessity always at least tied to the individual (be it a natural person or a corporation), and insofar may seem a natural counterpart to network analysis at the individual level.

The classical legal viewpoint primarily considers natural persons as legal subjects and only to a limited extent allowed other corporations to act; it was only through the development of legal doctrine that corporations were fully recognised as having legal subjectivity. A too liberal recognition of such corporations would invite abuse, as individuals could hide behind the corporation in order to escape liability for their own actions. In order to limit abuses and for reasons of legal certainty, however, such corporations are only legally recognised if they meet the strict legal requirements for the type of corporations in question.

Liability for networks and chains under current law

Two preliminary observations are in order before discussing liability issues of networks.

First of all, a difficulty with regard to developing a liability construction that is connected to healthcare networks is the fact that it is not always clear where the network ends. This applies in particular to non-professional networks, although it may also be a problem for more professionally organised networks, for example when new nodes begin to be attached to the network.

Secondly, another difficulty is the sheer diversity in nature and structure to be found among networks. This makes it hard to formulate rules that can be generally applied to most or all types of networks. The basic elements in the definition of networks offer too little ground to justify far-reaching legal consequences. The influence that a network partner has may be the most important factor, in line with positive law, as will be shown shortly.

As indicated above only natural persons (individuals) and legally recognised corporations are legal persons. Only legal persons are independent owners of rights and duties and can be held liable. As mentioned earlier a network is not a legal construct and does not in itself have a legal personality. We will now discuss the consequences for the potential liability of networks and chains. Our analysis will be based primarily on Dutch law, though it applies largely to most other western legal systems as well, as these share general rules and principles (Van Dam 2005, Von Bar 1998 and 2000).

In the first place, legal persons are responsible for their own actions. When they act contrary to norms of civil law, they can be held liable to pay damages. Most legal systems may in particular kinds of situations hold someone liable for the loss caused by another person (vicarious liability). Such liability is mostly based on a hierarchical relationship. This seems contrary to the character of a network that is based on the idea of non-hierarchical

relationships (Provan *et al.* 2007). Hence basic liability appears to be inappropriate to assign liability with regard to network failures, except with respect to the actor who commited a fault.

An exception is the Dutch liability of a client for actions of an independent contractor (article 6:171 Burgerlijk Wetboek), which is not a structural hierarchical relationship. An example is the liability of a building contractor for faults by a subcontracted carpenter. The extent of this liability is rather limited, though, and this is even more so in other legal systems. Perhaps parallels might be drawn between such a construction and the kind of network structure known as a *Network Administrative Organization*: a separate administrative entity is set up specifically to govern the network and its activities (Provan and Kenis 2007). Just as the main building contractor is responsible for the whole of the building process, the administrative entity has the responsibility to coordinate the operations within the network. However, unlike the contractor, the administrative entity need not have a contractual relationship with the network nodes, and such a contract is part of the reason why liability for acts of an independent contractor exists. Insofar as there are contracts between the network partners, there may be grounds for establishing liability (cf. Tjong Tjin Tai c.s. 2009).

An alternative ground for liability may exist in case of dominant network partners (a Lead Organization Network). Although a network is not a hierarchical organisation, it is possible that one of the partners has a stronger influence or more important role in the network than the others. The influence that a party has on the entire network and the network partners may forms the basis on which liability is allocated. In order to do so, the fault must be attributable as a consequence of negligence of the network partner (as his influence allows him to ensure the fault doesn't happen), which however is not to be assumed too lightly. In other parts of liability law the level of influence may be a relevant factor in determining the duty of care as well (cf. Tjong Tjin Tai c.s. 2009)

Private law also allows attribution of liability in the case of several types of cooperation, such as the company with limited liability. Legally speaking there is a strict difference between legally recognised forms of cooperation that have legal personality and those that don't. The former are always subject to a number of formal requirements, such as public registration, establishment through the services of a notary public, etcetera. In the scope of the present article such forms of cooperation are less relevant because from a social science point of view they are to be qualified as hierarchical forms of organisation and not as networks.

On the other hand there exist informal legally recognised kinds of cooperation, which can come into existence without formal requirements. Insofar as these do not have a separate legal personality, such as liability attached to group actions, they will not allow attaching liability to the network as a whole, only to the network partners. However, certain kinds of business partnerships may in Dutch law have assets separate from the property of the individual partners: these are the *maatschap* and the *vennootschap onder firma* (personal partnership). For such partnerships Dutch law allows liability to the property of the partnership as well as a to some extent liability for the partners. When one of the partners in a *maatschap* causes damage, the partners are all liable for an equal part of the loss. The liability regime of a *vennootschap onder firma* is based on joint liability, which means that all partners are liable for the entire loss caused by one of the partners.

However, these constructions have several strict material requirements. For example, both a *maatschap* and a *vennootschap onder firma* require that the cooperation strives for a common goal. Moreover, it is required that the common goal is aimed at achieving a material or financial benefit. Not all networks meet these requirements. Healthcare networks may for example aim primarily at improving the quality of health care for patients, for example the group of patients suffering from diabetes. It is not certain whether such a more idealistic, altruistic aim does fall under the requirement of a material benefit.

A question we have not yet considered is whether these conclusions need modification for networks that can be qualified as a chain. It appears that for chains the allocation of liability is easier than for networks in general, hence there is not a problem that needs solution at the network level. For example in the case of stroke service, it is easier to

find out which parties are involved with an alleged medical failure, because the chain is organized in temporally distinct phases. As the phase during which the medical failure has come to light is connected to the care by specific health care providers, it thereby determines or at least leads to a reasonable presumption that these particular providers are responsible wholly or in part for the failure that has occured. Health care providers which only operate in a different phase will be left out of consideration. But for the providers within the phase there will still be the same problem as with all networks, to determine which particular provider is to blame. Furthermore, the original cause of the failure might also be a failure from a previous phase of the chain, or even lie in the design of the chain. Hence liability for chains is not always simpler than network liability.

Perspectives for changes in liability of networks

This leads to the conclusion that there is no particular legal liability construct that can be applied to all networks in general, or even only to healthcare networks. Liability of healthcare networks is not explicitly regulated by law; there is no liability for a whole network as such. For at least two reasons this is an undesirable situation. First, in many medical cases it is very difficult to find out in which way the damage is caused and who is responsible, especially when certain healthcare providers are involved with a single patient. The second reason is that although there is general support for cooperation in health care networks – by healthcare insurance companies, patient consumer organisations, policy makers in The Netherlands -, the coordination between healthcare providers in such networks is a major problem in practice.

The Dutch Ministry of Health, Welfare and Sports has proposed a law on patient rights, containing a duty to cooperate for healthcare providers in a network (Ministry of Health, Welfare and Sport). The actual content of this duty is left unspecified, which leads to uncertainty for health care providers with respect to the extent of their obligations. Furthermore it is not explicated what the liability consequences are of a violation of this duty, in particular how liability risks are to be divided over partners in healthcare networks. From the perspective of a patient who is suffering damage, joint liability of all network partners involved is possibly the most desirable way to arrange liability, as it offers him more certainty of obtaining damages and leaves him full freedom on whom to approach. Seen from a broader perspective there are perhaps alternatives for the allocation of liability that may do full justice to all interest involved. An example would be proportional allocation of liability based on the contribution to the provision of healthcare. Another option is to establish (through statute law) a *Central Network Liability*, analogous to the *Central Hospital Liability* (according to which the hospital is liable for damages to health caused on its premises) in Dutch law, see article 7:462 Dutch Civil Code (Burgerlijk Wetboek). Such a construction still needs a separate entity above the network that is responsible for mistakes caused within the network and can be hold liable at all times. However, as positive law currently does not recognise such a construction, an explicit legal basis would be needed, such as a specific statute to that effect. Such a construction will therefore probably not be realised in the near future.

A drawback of a Central Network Liability is that it boils down to a relatively random attribution of liability foremost for purposes of providing the victim with compensation. In other words, such a construct does not seem to do justice to the typical features of a network, to wit a distribution of responsibility or influence among independent, equal partners. From this viewpoint, it would be preferable to have liability distributed among network partners. Such a distribution is already accepted for personal partnerships (*maatschap, personenvennootschap*), possibly a similar construct should be accepted for networks, even if they do not fulfill all the requirements of such a personal partnership. Whether this solution is feasible is a subject for further research.

Conclusion

Althoug networks as such are not recognised in law, the factual existence of a network may influence liability questions in case damage is caused through or in a network. As a network is not as such recognised as a legal person, the network itself cannot be held liable (except insofar it can be considered to be a recognised kind of legal corporation or partnership). This

entails that only the network partners can be held liable. There are several ways in which networks partners can be held liable, but these are mainly based on personal liability for individual faults. Network effects are mostly only taken into account indirectly and are not a direct basis for liability. We have discussed a few options of extending positive law in order to remedy the lack of liability in networks.

Besides the attribution of liability on the network level, it is also important whether the attribution of individual liability at the level of network partners (nodes) influences the operation of the network, whether it contributes to the network goal, and whether the liability regime might need adaption for network reasons. We have indicated that liability law takes account of network effects to a limited extent, and that the results of network theory do not fully cover the properties that are relevant for liability law. However, a full investigation of this issue of individual liability within networks would far exceed the scope of an article as the present and is to be left for further research.

The overarching goal would be to have liability constructs which support the formation of networks and the improvement of quality within these networks. Whether this result is reached does not only depend on the actual legal rules, but also on the actual effects on behaviour (both individually and on the network level) of such rules. To determine this, empirical research is essential, and legal researchers need to cooperate with colleagues in the field of social studies. The analysis of how the legal approach connects to network issues may hopefully contribute to such research.

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